

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

DESCRIPTIONS OF THREE NEW RED SQUIRRELS
(*TAMIASCIURUS*) FROM NORTH AMERICA.

BY ARTHUR H. HOWELL,
Biological Survey, U. S. Department of Agriculture.

In a study of the North American chickarees, or red squirrels, now in progress, I have been greatly aided by the loan of large series of specimens from Canada belonging to a number of the larger museums in this country and Canada. Of especial interest and importance are a very complete series from central British Columbia in the Museum of Vertebrate Zoology taken recently by T. T. and E. B. McCabe and a series from northern British Columbia in the American Museum of Natural History, taken by the late M. P. Anderson in 1902 and by George G. Goodwin within the last two years.

With this abundant material, together with that contained in the U. S. National Museum collections, it has been possible to distinguish three new races, one having an extensive range in the Athabaska-Mackenzie Valley, another occupying a large part of British Columbia, and a third inhabiting the region around Cook Inlet, Alaska.

***Tamiasciurus hudsonicus preblei*, subsp. nov.¹**

MACKENZIE CHICKAREE.

Type.—Collected at Fort Simpson, Mackenzie, February 29, 1904, by Edward A. Preble; ♀ adult, skin and skull, no. 133862, U. S. Nat. Mus. (Biological Survey collection); original number, 5141.

Range.—Chiefly the Athabaska-Mackenzie Valley in Canada and the greater part of central Alaska; south to the North Saskatchewan River, Saskatchewan.

Subspecific characters.—Similar to *T. h. hudsonicus* but larger; upper parts in winter pelage paler and more suffused with warm buff; head and

¹ Named for Edward A. Preble, who collected most of the material on which this race is based.

tail paler; summer pelage paler and more buffy (less brownish). Skull similar to that of *hudsonicus*, possibly averaging larger.

Color.—*Winter pelage:* Head and face mixed fuscous and light buff, the nose clear buff; sides of head and face light neutral gray; median dorsal area cinnamon-rufous or tawny; sides of body a mixture of warm buff and fuscous; lateral line deep neutral gray, usually faintly indicated and often obsolete; tail above, tawny or kaiser brown, bordered with black and edged with warm buff; tail beneath, light neutral gray, mixed with warm buff; feet mixed neutral gray and light buff; under parts white, vermiculated with fuscous, the grayish under fur more or less conspicuous. *Summer pelage:* Head and face mixed neutral gray and light buff; under parts and sides uniform tawny olive, mixed with fuscous; lateral line fuscous-black; tail above, tawny or sayal brown, edged with light buff; under parts white, washed with pale pinkish buff.

Measurements.—Average of 10 adult males from the Mackenzie Valley: Total length, 331.8 mm. (310–350); tail vertebrae, 137.8 (125–148); hind foot, 50.5 (49–51). Average of 10 adult females from same region: Total length, 331 (296–340); tail vertebrae, 132 (124–142); hind foot, 49.2 (48–51). *Skull:* Average of 10 adult males from Fort Simpson and Fort Norman: Greatest length, 47.5 (46.1–49.4); zygomatic breadth, 27.3 (26.2–28.6); cranial breadth, 20.7 (19.9–21.5); interorbital breadth, 14.2 (13.3–15.2); least postorbital breadth, 14.5 (14–14.9); length of nasals, 14.4 (13.2–15.8); maxillary toothrow, 8.1 (7.6–8.6). Average of 10 adult females from the same localities: Greatest length, 46.6 (45.8–48.1); zygomatic breadth, 27 (26.2–28.1); cranial breadth, 20.7 (20.2–21.1); interorbital breadth, 14.4 (13.5–15.3); least postorbital breadth, 14.6 (13.9–15.4); length of nasals, 14.2 (13.4–15); maxillary toothrow, 8 (7.7–8.5).

Remarks.—Before naming a new form of this group from Canada, it seems desirable to determine as nearly as possible the type locality of *Sciurus hudsonicus*. This is generally stated to be Hudson Strait, because of Erxleben's designation "*ad fretum Hudsonis*." So far as known, however, no squirrels occur on or near Hudson Strait. Erxleben's name was based entirely on Pennant's "Hudson Bay Squirrel" (Synopsis Quadrupeds, 1771).

In the year following Pennant's description there appeared an article by Forster in the Philosophical Transactions (1772, pp. 370–381), giving an account of a collection of mammals received by the Royal Society of London from a "Mr. Graham, a gentleman belonging to the settlement on Severn River." In this paper is listed the "common squirrel," under the name *Sciurus vulgaris*, citing also Pennant's "Synopsis," page 279, no. 206. This collection, so far as known, was the first to be received from the Hudson Bay region, and it seems practically certain that Pennant based his description on one or more specimens in that collection. Since the species does not occur at Hudson Strait, I hereby fix the type locality at the mouth of Severn River, Hudson Bay.

No specimens from this locality are at present available, but for purposes of comparison, a series from Oxford House and Norway House, Manitoba, is assumed to be approximately representative of the typical race. The

race here described differs markedly from *hudsonicus*, as shown by extensive series in both winter and summer pelage from numerous localities in the Athabaska-Mackenzie Valley and Alaska.

***Tamiasciurus hudsonicus columbiensis*, subsp. nov.**

BRITISH COLUMBIA CHICKAREE.

Type.—Collected on Raspberry Creek (about 30 miles southeast of Telegraph Creek), northern British Columbia, October 8, 1902, by M. P. Anderson; ♂ adult, skin and skull, no. 19891, American Mus. Nat. Hist.; original number, 858.

Range.—Northern and central British Columbia and southern Yukon, from vicinity of Lake Lebarge, Yukon, south to Chilcotin River, B. C., and eastward to the Canadian National Park, Alberta.

External characters.—Similar to *T. h. streatori*, but paler, both in winter and summer pelage; tail with less black and red averaging paler; hind foot smaller.

Compared with *preblei*: Size about the same but tail averaging shorter; upperparts in winter pelage darker, more olivaceous, and less suffused with buff; feet tawny rather than gray; tail darker, with darker edgings. Compared with *picatus*: Winter pelage paler and more olivaceous (less reddish); tail paler red; summer pelage paler. Compared with *petulans*: Red of upper parts paler; sides more olivaceous (less buffy); tail distinctly paler.

Cranial characters.—Skull closely similar to that of *T. h. picatus*; similar to that of *preblei*, but averaging smaller; averaging longer than in *petulans*, but narrower across zygomatica; distinctly smaller than in *streatori*.

Color.—*Winter pelage*: Median dorsal area hazel, shaded with pinkish buff; sides buffy olive, shaded with pinkish buff; top of head fuscous black, shaded with buff; sides of nose cinnamon buff; feet ochraceous tawny, shaded with fuscous; tail above, tawny, edged with black and tipped with ochraceous buff or cinnamon buff; tail beneath, a mixture of ochraceous tawny, cinnamon buff and smoke gray; under parts white, sometimes shaded with pale buff, and vermiculated with fuscous. *Summer pelage*: Upper parts and sides buffy brown or olive brown, the head slightly darker; feet ochraceous tawny; tail above, tawny or hazel, edged with black and tipped with pale buff; tail beneath, as in winter; under parts white, frequently washed with pale pinkish buff.

Measurements.—Average of 20 adults from Telegraph Creek, British Columbia: Total length, 321.7 mm. (306–332); tail vertebrae, 127.3 (120–138); hind foot, 49.3 (47–51). *Skull*: Average of 20 adults (13 males, 7 females) from same locality: Greatest length, 46.9 (45.2–48); zygomatic breadth, 27 (26.1–28); cranial breadth, 20.9 (20.2–21.3); interorbital breadth, 14.2 (13.4–16); least postorbital breadth, 14.8 (14.1–15.8); length of nasals, 14.5 (13.5–15.5); maxillary toothrow, 8.1 (7.8–8.6).

Specimens examined.—About 300 specimens of this race have been examined in this study, including 70 from Telegraph Creek, 84 from the Barkerville region (Indianpoint Lake, Cottonwood, etc.) and smaller

series from Atlin, Dease River, Fort Nelson, Fort Graham, Hazelton, Graham River, Moose River, Yellowhead Pass, Lake La Hache, and Chilcotin River.

***Tamiasciurus hudsonicus kenaiensis* subsp. nov.**

COOK INLET CHICKAREE.

Type.—Collected at Hope, Cook Inlet, Alaska, September 6, 1900, by W. H. Osgood; ♂ adult, skin and skull, no. 107603, U. S. Nat. Mus. (Biological Survey collection); original number, 1360.

Range.—Kenai Peninsula and base of Alaska Peninsula, Alaska.

External characters.—Similar in summer pelage to *T. hudsonicus petulaus*, but red of tail paler and more heavily mixed with black; feet darker (less buffy); hairs of dorsal area tipped with ochraceous rather than tawny; nose and face more blackish (less tawny); in winter pelage the dorsal area and tail are of a much paler red and the red is more restricted to a median band, the sides entirely without red.

Similar in summer pelage to *preblei* but upper parts slightly darker and more olivaceous (less buffy); head darker; feet shaded with fuscous; tail much more blackish; similar also in winter pelage, but red of upper parts averaging darker, less extensive, and less shaded with buff.

Similar in summer pelage to *columbiensis*, but head and tail more blackish, feet darker and less tawny; in winter pelage dorsal area paler, sides more grayish (less olivaceous), and feet darker (less tawny).

Cranial characters.—Skull closely similar to that of *columbiensis*; averaging smaller than that of *preblei*.

Color.—*Summer pelage*: Top of head and face fuscous-black, shaded with ochraceous buff; tip of nose pinkish buff or warm buff; ears fuscous, shaded with tawny; general tone of upper parts near Saccardo's umber, the hairs tipped with clay color; feet ochraceous-tawny or cinnamon-buff, usually heavily shaded with fuscous; tail above, a mixture of tawny or cinnamon-buff and black; tail beneath, usually without tawny and sometimes showing much smoke gray (from the bases of the hairs); under parts soiled white, washed with pale pinkish buff. *Winter pelage*: Median dorsal area from crown to rump tawny, shaded with pinkish buff; front of face mixed pinkish-buff and fuscous; sides of face smoke gray; sides of body mixed smoke gray and pinkish buff; feet hair-brown, slightly shaded with pinkish buff; tail above, tawny or ochraceous-tawny, bordered with black and cinnamon-buff; tail beneath, much as in summer; under parts white, vermiculated with fuscous.